

ABSTRACT

A semiconductor module includes: a semiconductor element (13) having  
a working unit (11) and a guard ring unit (12); and heat radiation members (15,  
5 14) arranged on an upper surface and a lower surface of the semiconductor  
element for cooling the semiconductor element. A passivation film (20) covers the  
guard ring but does not cover the working unit. The upper heat radiation  
member (15) is made of a flat metal plate connected to the working unit without  
contact with the passivation film. The upper heat radiation member is connected  
10 to the lower heat radiation member (14) in the thermo-conducting way.